Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Currently Amended) A molecular delivery vehicle for delivery of ~~therapeutic, diagnostic, or research~~ compounds to a target, comprising:
   (a) a carrier for carrying said compounds;
   (b) an adapter covalently linked to said carrier; and
   (c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target.

2. (Original) The molecular delivery vehicle of claim 1, wherein said target is attached to a natural or artificial surface.

3. (Original) The molecular delivery vehicle of claim 1, wherein said target is a cell surface receptor or a cell surface antigen.

4. (Cancelled).

5. (Original) The molecular delivery vehicle of claim 1, wherein said carrier comprises a polymer.

6. (Currently Amended) The molecular delivery vehicle of claim 1, wherein said carrier is selected from the group consisting of polysaccharides, polylysine, polyethylenimine, poly(vinyl alcohol), poly(divinyl) ether-*co*-maleic anhydrdride, poly(ethylene glycol), poly(methyl methacrylates), polyanhydrides, polyesters, polyacrylic acids, polyurethanes,N-(2-hydroxypropyl)methacrylamide, derivatized polyethylenglycoles, co-polymers and derivatized co-polymers, liposomes and derivatized liposomes, dendrimers and derivatized dendrimers, viral and bacteriophage particles, ~~bids~~ beads, nanoparticles, and combinations thereof.

7. (Currently Amended) The molecular delivery vehicle of claim 1, wherein said ~~therapeutic, diagnostic, or research~~ compounds are selected from the group consisting of nucleic acids, peptides, proteins, viruses, viral particles employed for gene delivery, chemotherapeutic agents, paramagnetic agents, radioactive agents, fluorogenic agents, and combinations thereof.

8. (Currently Amended) The molecular delivery vehicle of claim 1, wherein said adapter is selected from the group consisting of a wild type or mutant S-protein fragment of bovine ribonuclease A or human ribonuclease I, cellulose, calmodulin, and streptavidin.

9. (Previously Presented) The molecular delivery vehicle of claim 1, wherein said targeting portion of said recombinant targeting fusion protein is selected from the group consisting of cytokines, growth factors, peptide hormones, antibodies, fusion proteins, and combinations thereof.

10. (Previously Presented) The molecular delivery vehicle of claim 1, wherein said targeting portion of said recombinant targeting fusion protein is vascular endothelial growth factor 121.

11. (Currently amended) The molecular delivery vehicle of claim 1, wherein said recognition portion of said recombinant targeting fusion protein is an S-peptide fragment of bovine ribonuclease A or human ribonuclease I.

12. (Cancelled)

13. (Original) The molecular delivery vehicle of claim 1, wherein said target is a receptor found on a cell selected from the group consisting of cells expressing receptors for vascular endothelial growth factor.

14. (Previously Presented) The molecular delivery vehicle of claim 1, wherein said recombinant targeting fusion protein further comprises a spacer peptide positioned between said recognition portion and said targeting portion.

15. (Currently Amended) A pharmaceutical composition, comprising:

(1) a pharmaceutically acceptable carrier; and

(2) a pharmaceutically effective amount of a molecular delivery vehicle for delivery of ~~therapeutic, diagnostic, or research~~ compounds to a target, comprising:

(a) a carrier for carrying said compounds;

(b) an adapter covalently linked to said carrier; and

(c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target.

16. (Original) The pharmaceutical composition of claim 15, wherein said target is attached to a natural or artificial surface.

17. (Original) The pharmaceutical composition of claim 15, wherein said target is a cell surface receptor or a cell surface antigen.

18. (Cancelled).

19. (Original) The pharmaceutical composition of claim 15, wherein said carrier comprises a polymer.

20. (Currently Amended) The pharmaceutical composition of claim 15, wherein said carrier is selected from the group consisting of polysaccharides, polylysine,

polyethylenimine, poly(vinyl alcohol), poly(divinyl) ether-*co*-maleic anhydrdride, poly(ethylene glycol), poly(methyl methacrylates), polyanhydrides, polyesters, polyacrylic acids, polyurethanes,N-(2-hydroxypropyl)methacrylamide, derivatized polyethylenglycols, co-polymers and derivatized co-polymers, liposomes and derivatized liposomes, dendrimers and derivatized dendrimers, viral and bacteriophage particles, ~~bids~~ beads, nanoparticles, and combinations thereof.

21. (Currently Amended) The pharmaceutical composition of claim 15, wherein said ~~therapeutic, diagnostic, or research~~ compounds are selected from the group consisting of nucleic acids, peptides, proteins, viruses, viral particles employed for gene delivery, chemotherapeutic agents, paramagnetic agents, radioactive agents, fluorogenic agents, and combinations thereof.

22. (Currently Amended) The pharmaceutical composition of claim 15, wherein said adapter is selected from the group consisting of a wild-type or mutant S-protein fragment of bovine ribonuclease A or human ribonuclease I, cellulose, calmodulin, and streptavidin.

23. (Previously Presented) The pharmaceutical composition of claim 15, wherein said targeting portion of said recombinant targeting fusion protein is selected from the group consisting of cytokines, growth factors, peptide hormones, antibodies, fusion proteins, and combinations thereof.

24. (Previously Presented) The pharmaceutical composition of claim 15, wherein said targeting portion of said recombinant targeting fusion protein is vascular endothelial growth factor 121.

25. (Currently Amended) The pharmaceutical composition of claim 15, wherein said recognition portion of said recombinant targeting fusion protein is an S-peptide fragment of bovine ribonuclease A or human ribonuclease I.

26. (Cancelled).

27. (Original) The pharmaceutical composition of claim 15, wherein said target is a receptor found on a cell selected from the group consisting of cells expressing receptors for vascular endothelial growth factor.

28. (Previously Presented) The pharmaceutical composition of claim 15, wherein said recombinant targeting fusion protein further comprises a spacer peptide positioned between said recognition portion and said targeting portion.

29. (Original) The pharmaceutical composition of claim 15, wherein said pharmaceutically acceptable carrier is selected from the group consisting of water, gelatin, lactose, starch, magnesium stearate, talc, plant oils, gums, alcohol, petroleum jelly, buffered saline, and combinations thereof.

30. (Currently Amended) An article of manufacture comprising packaging material and a pharmaceutical agent contained within said packaging material, wherein said pharmaceutical agent is therapeutically effective for treating pathophysiological conditions that depend on cells that can be detected or affected via target-mediated delivery of therapeutic or diagnostic compounds and wherein said packaging material comprises a label which indicates that the pharmaceutical agent can be used for treating pathophysiological conditions that depend on cells that can be detected or affected via target-mediated delivery of ~~therapeutic or diagnostic~~ compounds, and wherein said pharmaceutical agent comprises a pharmaceutically effective amount of a molecular delivery vehicle for delivery of ~~therapeutic, diagnostic, or research~~ said compounds to a target, comprising:

(a) a carrier for carrying said compounds;

(b) an adapter covalently linked to said carrier; and

(c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target;

in a pharmaceutically acceptable carrier.

31. (Currently Amended) A method for delivering ~~therapeutic, diagnostic, or research~~ compounds to a target in a patient, comprising the steps of:

administering a pharmaceutical composition to said patient, said pharmaceutical composition comprising:

(1) a pharmaceutically acceptable carrier; and

(2) a pharmaceutically effective amount of a molecular delivery vehicle for delivery of compounds to a target, comprising:

(a) a carrier for carrying said compounds;

(b) an adapter covalently linked to said carrier; and

(c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target; and

permitting said molecular delivery vehicle to contact said target to deliver said compounds to said target in said patient.

32. (Original) The method of claim 31, wherein said target is attached to a natural or artificial surface.

33. (Previously Presented) The method of claim 31, wherein said target is a cell surface receptor or a cell surface antigen.

34. (Cancelled).

35. (Original) The method of claim 31, wherein said carrier comprises a polymer.

36. (Currently Amended) The method of claim 31, wherein said carrier is selected from the group consisting of polysaccharides, polylysine, polyethylenimine, poly(vinyl alcohol), poly(divinyl) ether-*co*-maleic anhydrdride, poly(ethylene glycol), poly(methyl methacrylates), polyanhydrides, polyesters, polyacrylic acids, polyurethanes,N-(2-hydroxypropyl)methacrylamide, derivatized polyethylenglycols, co-polymers, derivatized co-polymers, liposomes and derivatized liposomes, dendrimers and derivatized dendrimers, viral and bacteriophage particles, ~~bids~~ beads, nanoparticles, and combinations thereof.

37. (Currently Amended) The method of claim 31, wherein said ~~therapeutic, diagnostic, or research~~ compounds are selected from the group consisting of nucleic acids, peptides, proteins, viruses, viral particles employed for gene delivery, chemotherapeutic agents, paramagnetic agents, radioactive agents, fluorogenic agents, and combinations thereof.

38. (Currently Amended) The method of claim 31, wherein said adapter is selected from the group consisting of wild-type or mutant S-protein fragment of bovine ribonuclease A or human ribonuclease I, cellulose, calmodulin, and streptavidin.

39. (Previously Presented) The method of claim 31, wherein said targeting portion of said recombinant targeting fusion

protein is selected from the group consisting of cytokines, growth factors, peptide hormones, antibodies, fusion proteins, and combinations thereof.

40. (Previously Presented) The method of claim 31, wherein said targeting portion of said recombinant targeting fusion protein is vascular endothelial growth factor 121.

41. (Currently Amended) The method of claim 31, wherein said recognition portion of said recombinant targeting fusion protein is an S-peptide fragment of bovine ribonuclease A or human ribonuclease I.

42. (Cancelled).

43. (Original) The method of claim 31, wherein said target is a receptor found on a cell selected from the group consisting cells expressing receptors for vascular endothelial growth factor.

44. (Original) The method of claim 31, wherein said targeting protein further comprises a spacer peptide positioned between said recognition portion and said targeting portion.

45. (Original) The method of claim 31, wherein said pharmaceutically acceptable carrier is selected from the group consisting of water, gelatin, lactose, starch, magnesium stearate, talc, plant oils, gums, alcohol, petroleum jelly, buffered saline, and combinations thereof.

46-57. (Cancelled).

58. (New) A molecular delivery vehicle for delivery of compounds to a target, comprising:

(a) a carrier for carrying said compounds;

(b) an adapter covalently linked to said carrier; and

(c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target, and wherein said targeting portion of said recombinant targeting fusion protein is vascular endothelial growth factor 121.

59. (New) The molecular delivery vehicle of claim 58, wherein said target is attached to a natural or artificial surface.

60. (New) The molecular delivery vehicle of claim 58, wherein said target is a cell surface receptor or a cell surface antigen.

61. (New) The molecular delivery vehicle of claim 58, wherein said carrier comprises a polymer.

62. (New) The molecular delivery vehicle of claim 58, wherein said carrier is selected from the group consisting of polysaccharides, polylysine, polyethylenimine, poly(vinyl alcohol), poly(divinyl) ether-*co*-maleic anhydrdride,

poly(ethylene glycol), poly(methyl methacrylates), polyanhydrides, polyesters, polyacrylic acids, polyurethanes,N-(2-hydroxypropyl)methacrylamide, derivatized polyethylenglycoles, co-polymers and derivatized co-polymers, liposomes and derivatized liposomes, dendrimers and derivatized dendrimers, viral and bacteriophage particles, beads, nanoparticles, and combinations thereof.

63. (New) The molecular delivery vehicle of claim 58, wherein said compounds are selected from the group consisting of nucleic acids, peptides, proteins, viruses, viral particles employed for gene delivery, chemotherapeutic agents, paramagnetic agents, radioactive agents, fluorogenic agents, and combinations thereof.

64. (New) The molecular delivery vehicle of claim 58, wherein said adapter is selected from the group consisting of a wild type or mutant S-protein fragment of bovine ribonuclease A, human ribonuclease I, cellulose, calmodulin, and streptavidin.

65. (New) The molecular delivery vehicle of claim 58, wherein said recognition portion of said recombinant targeting fusion protein is an S-peptide fragment of bovine ribonuclease A or human ribonuclease I.

66. (New) The molecular delivery vehicle of claim 58, wherein said target is a receptor found on a cell selected from the

group consisting of cells expressing receptors for vascular endothelial growth factor.

67. (New) The molecular delivery vehicle of claim 58, wherein said recombinant targeting fusion protein further comprises a spacer peptide positioned between said recognition portion and said targeting portion.

68. (New) A pharmaceutical composition, comprising:

(1) a pharmaceutically acceptable carrier; and

(2) a pharmaceutically effective amount of a molecular delivery vehicle for delivery of compounds to a target, comprising:

(a) a carrier for carrying said compounds;

(b) an adapter covalently linked to said carrier; and

(c) a recombinant targeting fusion protein comprising a recognition portion and a targeting portion, said recognition portion consisting essentially of a recognition peptide, and capable of binding to said adapter, said targeting portion capable of binding to said target, and wherein said targeting portion of said recombinant targeting fusion protein is vascular endothelial growth factor 121.

69. (New) The pharmaceutical composition of claim 68, wherein said target is attached to a natural or artificial surface.

70. (New) The pharmaceutical composition of claim 68, wherein said target is a cell surface receptor or a cell surface antigen.

71. (New) The pharmaceutical composition of claim 68, wherein said carrier comprises a polymer.

72. (New) The pharmaceutical composition of claim 68, wherein said carrier is selected from the group consisting of polysaccharides, polylysine, polyethylenimine, poly(vinyl alcohol), poly(divinyl) ether-*co*-maleic anhydrdride, poly(ethylene glycol), poly(methyl methacrylates), polyanhydrides, polyesters, polyacrylic acids, polyurethanes,N-(2-hydroxypropyl)methacrylamide, derivatized polyethylenglycols, co-polymers and derivatized co-polymers, liposomes and derivatized liposomes, dendrimers and derivatized dendrimers, viral and bacteriophage particles, beads, nanoparticles, and combinations thereof.

73. (New) The pharmaceutical composition of claim 68, wherein said compounds are selected from the group consisting of nucleic acids, peptides, proteins, viruses, viral particles employed for gene delivery, chemotherapeutic agents, paramagnetic agents, radioactive agents, fluorogenic agents, and combinations thereof.

74. (New) The pharmaceutical composition of claim 68, wherein said adapter is selected from the group consisting of a wild-type or mutant S-protein fragment of bovine

ribonuclease A or human ribonuclease I, cellulose, calmodulin, and streptavidin.

75. (New) The pharmaceutical composition of claim 68, wherein said recognition portion of said recombinant targeting fusion protein is an S-peptide fragment of bovine ribonuclease A or human ribonuclease I.

76. (New) The pharmaceutical composition of claim 68, wherein said target is a receptor found on a cell selected from the group consisting of cells expressing receptors for vascular endothelial growth factor.

77. (New) The pharmaceutical composition of claim 68, wherein said recombinant targeting fusion protein further comprises a spacer peptide positioned between said recognition portion and said targeting portion.

78. (New) The pharmaceutical composition of claim 68, wherein said pharmaceutically acceptable carrier is selected from the group consisting of water, gelatin, lactose, starch, magnesium stearate, talc, plant oils, gums, alcohol, petroleum jelly, buffered saline, and combinations thereof.